

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1. (Original): A sheet identifiable by near infrared spectroscopy, which includes at least one NIR component sensitive to radiation in the near infrared, and qualifiable and/or quantifiable by near infrared spectroscopy using a specific calibration.
2. (Currently amended): The sheet as claimed in the preceding claim, ~~characterized in that~~ wherein it includes said NIR component in one or more predetermined quantities, said NIR component being a marker having specific absorption properties in the near infrared.
3. (Currently amended): The sheet as claimed ~~in either of the preceding claims,~~ ~~characterized in that~~ claim 2, wherein it includes at least two different NIR components sensitive to radiation in the near infrared, said components being present in respective amounts and in a ratio such that their respective spectroscopic properties in the near infrared are concealed within the spectrum of said sheet obtained by spectroscopy in the near infrared, said components being qualifiable and/or quantifiable using said calibration, especially by their respective quantities and/or ratio and/or respective or relative distributions.
4. (Currently amended): The sheet as claimed ~~in one of claims 1 to 3, characterized in that~~ claim 1, wherein said NIR components are chosen from the usual pigment fillers used in cellulose or synthetic paper, preferably from silica oxides, in particular talc or kaolin, from carbonates and from synthetic organic polymers or blends thereof.
5. (Currently amended): The sheet as claimed ~~in one of the preceding claims, characterized in that~~ claim 1, wherein the sheet is a fibrous sheet based on cotton and/or cellulose and/or synthetic fibers.

6. (Currently amended): The sheet as claimed in ~~the preceding claim, characterized in that~~ claim 1, wherein said sheet is a sheet of paper.

7. (Currently amended): The sheet as claimed in ~~one of claims 1 to 4, characterized in that~~ claim 1, wherein the sheet is a nonfibrous sheet or plastic film, particularly based on one or more polyolefins.

8. (Currently amended): The sheet as claimed in ~~one of the preceding claims, characterized in that~~ claim 1, wherein at least one of said NIR components is at least partly integrated into said sheet.

9. (Currently amended): The sheet as claimed in ~~the preceding claim, characterized in that~~ claim 1, wherein said NIR component is integrated within the thickness with the base compounds of said sheet.

10. (Currently amended): The sheet as claimed in ~~one of the preceding claims, characterized in that~~ claim 1, wherein said NIR component is fixed by chemical bonding to a base compound of said sheet.

11. (Currently amended): The sheet as claimed in ~~one of the preceding claims, characterized in that~~ claim 1, wherein at least one of said NIR components is placed in and/or on a so-called security element, such as a thread, a strip or a fiber, and said element is at least partly integrated into the sheet.

12. (Currently amended): The sheet as claimed in claim[[s]] 5 ~~and 10 or claim 11,~~ characterized in wherein that said NIR component is fixed by chemical bonding to one or more cotton fibers.

13. (Currently amended): The sheet as claimed in ~~one of the preceding claims,~~
~~characterized in that~~ claim 1, wherein the sheet includes a "variable distribution" region within
which at least one NIR component sensitive to near infrared is distributed in a variable manner.

14. (Currently amended): The sheet as claimed in claim 13, ~~characterized in that~~ wherein
said region is a watermarked region or a region associated with the nonuniformity of formation of
the sheet.

15. (Currently amended): The sheet as claimed in ~~either of claims 13 and 14,~~ ~~characterized~~
~~in that~~ claim 13, wherein said variable distribution region is in the form of a code.

16. (Currently amended): The sheet as claimed in claim 15, ~~characterized in that~~ wherein
said code is in the form of a pattern with an alternation of regions of reduced thickness and regions
of thickness greater than or equal to the thickness of the rest of the sheet, especially a watermarked
barcode.

17. (Currently amended): A security document, ~~characterized in that~~ wherein it comprises
a sheet as claimed in ~~one of the preceding claims~~ claim 1.

18. (Currently amended): The document as claimed in ~~the preceding claim,~~ ~~characterized~~
~~in that~~ claim 1, wherein it is a banknote.

19. (Currently amended): A method of authenticating a sheet as described in claim[[s]] 1
[[to 16]] that includes at least one NIR component sensitive in the near infrared, preferably at least
two NIR components, in which method:

- at least one region of said sheet that includes said NIR component(s) is exposed to radiation emitted in the near infrared;
- the spectral data thus acquired is recorded;
- said NIR component(s) is qualified and/or quantified by analyzing the near infrared spectrum thus obtained using a specific calibration held secret and rigorously preestablished on the basis of measurements carried out for sheets that include said NIR component or, as the case may be, various mixtures of said NIR components, which are fully defined by their quantities and/or ratios;
- the data resulting from the spectroscopic analysis thus determined is compared with the original data stored in a database; and
- the authenticity of said sheet is validated if the data resulting from the analysis is equal to the original data.

20. (Currently amended): The authentication method as claimed in claim 19, ~~characterized in that~~ wherein the spectral data is acquired and analyzed by Fourier transform near infrared spectroscopy.

21. (Currently amended): The authentication method as claimed in ~~either of claims 19 and 20~~ claim 19 and for a sheet that includes a variable distribution region ~~as described in claims 13 to 16~~ within which at least one NIR component sensitive to near infrared is distributed in a variable manner, said region exposed to the near infrared radiation being this region.

22. (Currently amended): The authentication method as claimed in claim 21, ~~characterized in that~~ wherein the spectral data from said variable distribution region is acquired by transmission or by transreflection.

23. (Currently amended): The method as claimed in ~~either of claims 21 and 22,~~ claim 21, wherein the spectroscopic image in the near infrared of said variable

distribution region is reconstructed using suitable software from the data resulting from the spectroscopic analysis and this image is compared with the original image of said region stored in a database so as to validate the authenticity of the sheet.

24. (Currently amended): The method as claimed in ~~one of claims 21 to 23~~, characterized ~~in that~~ claim 21, wherein said variable distribution region of the sheet is a watermarked region, in particular a watermark in the form of a barcode.

25. (Currently amended): The method as claimed in ~~one of claims 21 to 23~~, characterized ~~in that~~ claim 21, wherein said variable distribution region is a region associated with the nonuniformity of formation of the sheet, said region being identified with or corresponding to the entire sheet.

26. (Currently amended): The authentication method as claimed in ~~one of claims 19 to 25~~ claim 19, applied to the authentication of ~~the documents described in either of claims 17 and 18~~ a security document comprising a sheet identifiable by near infrared spectroscopy, which includes at least one NIR component sensitive to radiation in the near infrared, and qualifiable and/or quantifiable by near infrared spectroscopy using a specific calibration.